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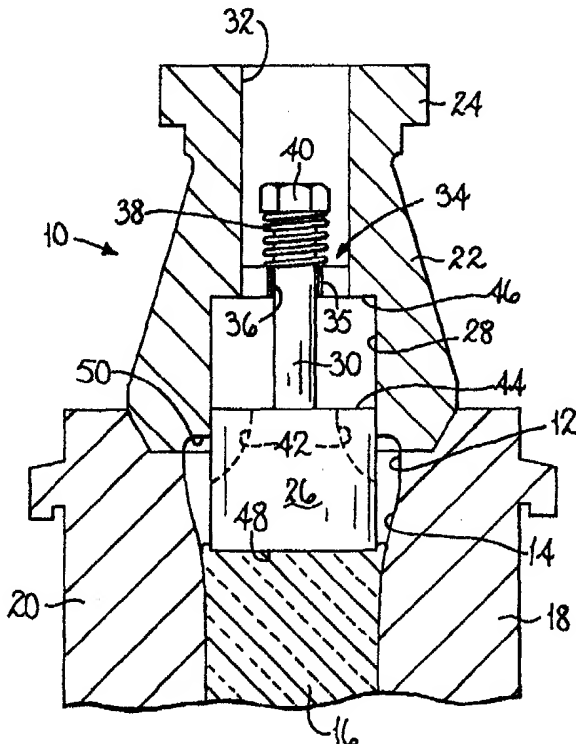
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54 Forming parisons in the manufacture of glass containers.

57 In forming parisons by blowing, a baffle (10) is used for closing an upwardly opening loading opening (12) of a mould cavity (14). The baffle comprises a heat-absorbing member (26) mounted so that it projects through the loading opening into contact with the molten glass and is retractable when pressure is applied to the glass. The member (26) absorbs heat from a upper portion of a gob (16) in the mould cavity.



FORMING PARISONS IN THE MANUFACTURE OF GLASS CONTAINERS

This invention is concerned with a method of forming parisons in the manufacture of glass containers and with a baffle for use in such a method.

In the manufacture of glass containers, a gob of molten glass is formed into a parison and then the parison is transferred to a mould in which it is blown into the shape of the required container. The parison is formed by introducing a gob of molten glass into a cavity of a mould through an upwardly-opening loading opening of the mould, positioning a baffle on the mould so that the baffle closes the loading opening, and applying pressure to the glass to cause it to be pressed into contact with moulding surfaces of the mould cavity and the baffle to thereby shape the parison. The pressure may be applied to the glass either by moving a plunger into the mould cavity so that the plunger forces the glass against the moulding surfaces or by blowing air into a cavity in the glass so that the glass is caused to expand. Where the parison is blown, the gob is first forced down into contact with a small plunger by applying air under pressure to the glass, the plunger is then withdrawn from the glass leaving a space therein, and the blowing air is introduced into the space vacated by the plunger.

After the gob has been introduced into the mould cavity, the glass which is to form the outer surface of the parison forms the outer surface of the gob. Lower and side portions of the outer surface of the gob are in contact with the mould throughout the parison forming process so that they are continually losing heat to the mould. However, the upper portion of the surface of the gob is initially not in contact with the mould and only comes into contact with the baffle at the end of the parison forming process. Thus, this upper portion does not lose as much heat as do the remaining portions of the surface of the gob. Where the parison is blown, this results in an unequal distribution of glass in the wall of the parison, the phenomenon being known as "settle wave". This unequal glass distribution causes the production of inferior containers. The phenomenon does not occur, where the parison is pressed by a plunger, as the wall thickness is controlled.

It is an object of the present invention to provide a method of alleviating the phenomenon of "settle wave" and a baffle for use in such a method.

The invention provides a method of forming parisons in the manufacture of glass containers, the method comprising introducing a gob of molten glass into a cavity of a mould through an upwardly-opening loading opening of the mould, positioning

a baffle on the mould so that the baffle closes the loading opening, and applying pressure to the glass by blowing air into a cavity therein to cause it to be pressed into contact with moulding surfaces of the mould cavity and the baffle to thereby shape the parison, characterised in that the baffle also comprises a heat-absorbing member introduced into the mould cavity and engages an upper portion of the gob, said heat absorbing member being arranged to move with the glass as the glass is pressed as aforesaid.

In a method according to the last preceding paragraph, the heat-absorbing member absorbs heat from the upper surface of the gob so that this upper surface portion experiences similar conditions to the remainder of the surface of the gob during the parison formation process. In this way, the unequal distribution of glass is reduced.

The invention also provides a baffle for use in forming parisons in the manufacture of glass containers for closing an upwardly-opening loading opening of a mould cavity after a gob of molten glass has been introduced into the mould cavity, the baffle comprising a body portion arranged to be mounted on moving means for moving the baffle between an operative position thereof in which it closes said loading opening and an out-of-the-way position thereof, and a heat-absorbing member mounted on the body portion so that, when the baffle is in its operative position, the member projects through the loading opening into contact with the molten glass, the member being retractable into a recess in the body portion when pressure is applied to the glass.

By the use of a baffle according to the last preceding paragraph, it is ensured that the heat-absorbing member is brought into contact with the glass as soon as possible after the loading of the gob into the mould cavity. The heat absorbing member can then act to absorb heat from the upper surface of the glass for the maximum length of the parison-forming process and thereby reduce the phenomenon of "settle wave".

The heat-absorbing member may be made of the same material as the mould, e.g. cast iron or other metal, so that the upper surface of the glass experiences similar conditions to the side and lower surfaces of the glass.

In order to provide for the introduction of air under pressure into the mould cavity to force the glass downwardly into contact with the plunger used for creating a cavity in the glass into which air is blown, the heatabsorbing member may define air passages opening through side portions of the

member so that, when the member projects into the cavity, air can enter the cavity through the passages, the passages being arranged to be closed as the member retracts into the recess.

In order to counter balance the weight of the heat-absorbing member, the heat-absorbing member may be carried on a spring mounted on the body portion of the baffle so that the action of the spring tends to counteract the weight of the heat-absorbing member.

There now follows a detailed description, to be read with reference to the accompanying drawing, of a method of forming parisons and of a baffle for use in such a method which are illustrative of the invention. It is to be understood that the illustrative method and the illustrative baffle have been selected for description by way of example.

The drawing is a cross-sectional view taken vertically through the illustrative baffle showing it in position on a mould.

The illustrative baffle 10 is for use in forming parisons in the manufacture of glass containers for closing an upwardly-opening loading opening 12 of a mould cavity 14 after a gob of molten glass 16 has been introduced into the mould cavity 14. The mould cavity 14 is defined by side portions 18 and 20 which engage one another and define the cavity 14. The baffle 10 comprises a body portion 22 arranged to be mounted on moving means (not shown) for moving the baffle 10 between an operative position thereof (shown in the drawing) in which the baffle closes the loading opening 12 and an out-of-the-way position of the baffle reached by moving the baffle vertically away from the mould and also turning it out of alignment therewith. The body portion 22 has a flange 24 by which the baffle 10 is secured to the moving means.

The baffle 10 also comprises a heat absorbing member 26 in the form of a cylindrical plug of cast iron which is mounted on the body portion 22 so that, when the baffle 10 is in its operative position, the member 26 projects through the loading opening 12 into contact with the molten glass 16 (this condition is shown in the drawing). The member 26 is retractable into a cylindrical recess 28 in the body portion 22 when pressure is applied to the glass.

The member 26 is mounted on the portion 22 by means of a bolt 30 which extends upwardly from the member 26 through the recess 28 and into a passage 32 in the body portion 22. The passage 32 is separated from the recess 28 by a flange 34 of the body portion 22 which has a central hole 36 through which the bolt 30 passes. A spring 38 acts between the flange 34 and a head 40 of the bolt 30 which is in the passage 32. Thus,

the heat-absorbing member 26 is carried on the spring 38 mounted on the body portion 22 of the baffle 10. Holes 35 in the flange 34 allow air to pass from the passage 32 into the recess 28.

The heat-absorbing member 26 defines air passages 42 opening through side portions of the member 26 so that, when the member 26 projects into the cavity 14, air can enter the cavity through the passages 42. The passages 42 are arranged to be closed as the member retracts into the recess 28. The passages 42 are formed by grooves in the member 26 which open at an upper end of the member 26 and communicate with the interior of the recess 28 and open as slots in the sides of the member 26. Air under pressure introduced into the passage 32 can pass through the holes 35 and the recess 28 and enter the cavity 14 through the passages 42.

In the illustrative method, parisons are formed by introducing the gob 16 of molten glass into the cavity 14 of a mould through the upwardly-opening loading opening 12 of the mould, positioning the baffle 10 on the mould so that the baffle closes the loading opening 12, applying air under pressure to the passage 32 so that the air enters the cavity 14 through the passages 42 and forces the glass 16 downwardly in the mould into contact with a plunger (not shown), withdrawing the plunger from the glass 16 to leave a cavity in the glass, and applying pressure to the glass to cause it to be pressed into contact with moulding surfaces of the mould cavity 14 and the baffle 10 to thereby shape the parison by introducing air under pressure into the cavity vacated by the plunger so that the glass 16 is blown. In the illustrative method, when the baffle is positioned on the mould, the heat-absorbing member 26 is introduced into the mould cavity 14 and engages an upper portion of the gob 16. The heat-absorbing member 26 acts to absorb heat from the upper surface of the glass 16. As the parison is blown in the illustrative method, the heat-absorbing member 26 retracts into the recess 28 until the upper surface 44 of the member 26 engages an upper surface 46 of the recess 28 at which point the lower surface 48 of the member 26 is flush with a lower surface 50 of the portion 10. Thus, at the end of the parison blowing process, the glass is pressed against a continuous surface provided by the baffle 10 and the side portions 18 and 20.

It is found that the illustrative method provides parisons with a more equal distribution of glass than is achieved by conventional methods. This distribution is improved if the member 26 is formed of the same material as the side portions 18 and 20.

Claims

1. A method of forming parisons in the manufacture of glass containers, the method comprising introducing a gob (16) of molten glass into a cavity (14) of a mould (18, 20) through an upwardly-opening loading opening (12) of the mould, positioning a baffle (10) on the mould so that the baffle closes the loading opening, and applying pressure to the glass by blowing air into a cavity therein to cause it to be pressed into contact with moulding surfaces of the mould cavity and the baffle to thereby press the parison, characterised in that a heat-absorbing member (26) is introduced into the mould cavity and engages an upper portion of the gob, said heat-absorbing member being arranged to move with the glass as the glass is pressed as aforesaid.

2. A baffle (10) for use in forming parisons in the manufacture of glass containers for closing an upwardly-opening loading opening (12) of a mould cavity (18, 20) after a gob (16) of molten glass has been introduced into the mould cavity, the baffle comprising a body portion (22) arranged to be mounted on moving means for moving the baffle

between an operative position thereof in which it closes said loading opening and an out-of-the-way position thereof, characterised in that the baffle also comprises a heat-absorbing member (26) mounted on the body portion so that, when the baffle is in its operative position, the member projects through the loading opening (12) into contact with the molten glass, the member being retractable into a recess (28) in the body portion (22) when pressure is applied to the glass.

3. A baffle according to claim 2, characterised in that the heat-absorbing member (26) is made of the same material as the mould.

4. A baffle according to either one of claims 2 and 3, characterised in that the heat-absorbing member (26) defines air passages (42) opening through side portions of the member so that, when the member projects into the cavity, air can enter the cavity through the passages, the passages being arranged to be closed as the member retracts into the recess (28).

5. A baffle according to any one of claims 2 to 4, characterised in that the heat-absorbing member (26) is carried on a spring (38) mounted on the body portion (22) of the baffle (10).

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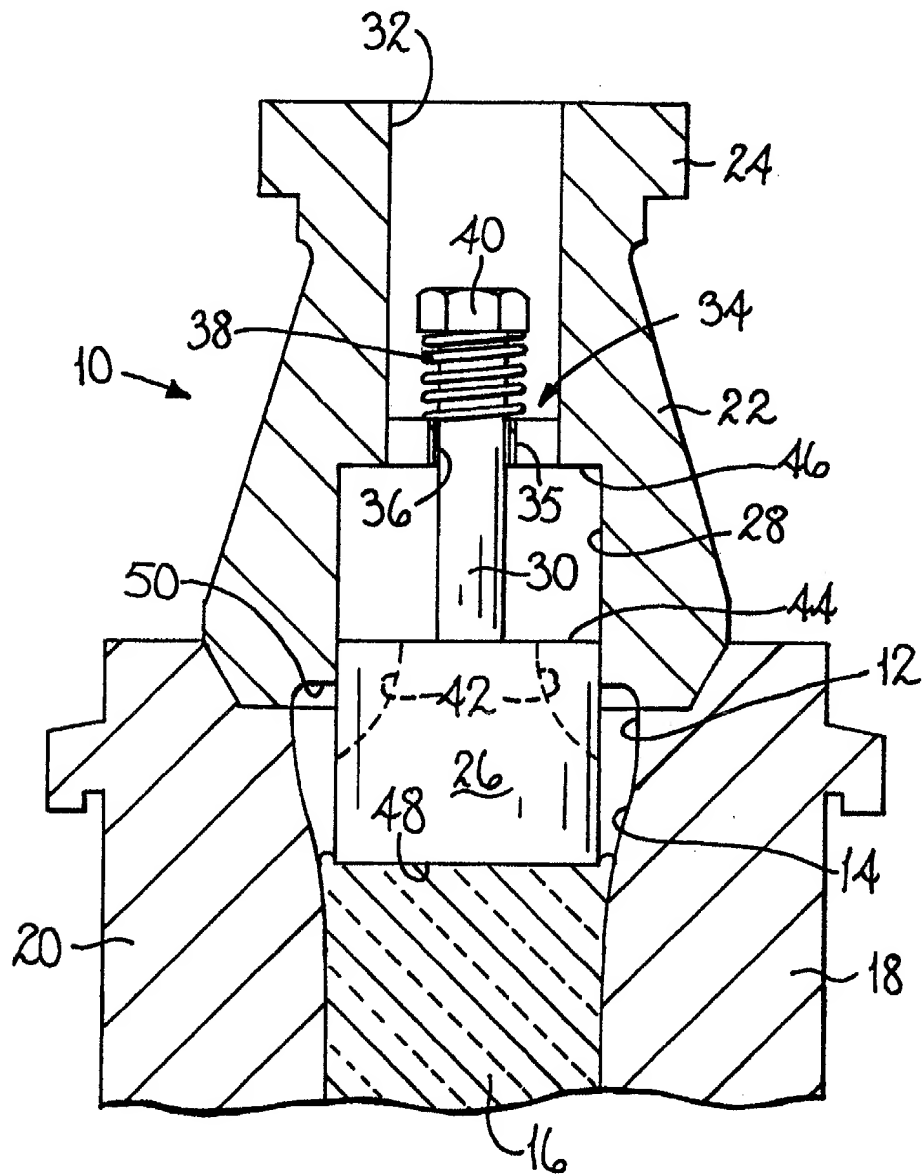
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European Patent
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EUROPEAN SEARCH REPORT

Application number

EP 86 30 8628

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
X	US-A-1 853 861 (HATCH) * Whole document *	1,2,5	C 03 B 9/34
A	--- US-A-2 205 382 (GARWOOD) * Whole document *	1	
A	--- GB-A-2 093 016 (NORTHUP) * Whole document *	1	
A	--- DE-C- 114 291 (HEERDT) * Whole document *	1	
A	--- US-A-3 171 732 (ANDERSEN) * Figure 2 *	1	
A	--- US-A-1 404 206 (LA FRANCE) * Whole document *	1	TECHNICAL FIELDS SEARCHED (Int. Cl.4)
A	--- US-A-2 075 771 (SOUBIER) -----		C 03 B 9/00
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 09-02-1987	Examiner VAN DEN BOSSCHE W.L.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	